

WHAT IS CLAIMED IS:

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1. An imaging apparatus comprising:

an image carrier that is adapted to form a latent image;

a charge unit that is adapted to charge the image carrier;

a developing unit that is adapted to develop the latent

10 image formed on the image carrier with toner to form a toner image;

a transfer unit that is adapted to conduct at least one of a process of directly transferring the toner image onto a recording medium that is carried by a transfer belt, and a

15 process of transferring the toner image onto the transfer belt and then transferring the toner image onto the recording medium from the transfer belt; and

a cleaning unit including a cleaning blade and a brush roller; wherein

20 an average roundness Ψ of the toner is within a range of 0.93~0.99; and

a friction coefficient μ_s of the image carrier satisfies a condition, friction coefficient $\mu_s \leq 3.6 - 3.3 \times$ average roundness Ψ .

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2. The imaging apparatus as claimed in claim 1, wherein
5 the brush roller of the cleaning unit is adapted to have metal
salt of aliphatic acid applied thereon with a force greater
than or equal to 500 mN, after which said brush roller applies
the metal salt of aliphatic acid on the image carrier.

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3. The imaging apparatus as claimed in claim 2, wherein
the metal salt of aliphatic acid corresponds to stearic acid.

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4. The imaging apparatus as claimed in claim 2, wherein
20 the metal salt of aliphatic acid is formed into a bar shape and
functions as a flicker.

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5. The imaging apparatus as claimed in claim 1, wherein the friction coefficient of the image carrier is in a range of 0.4~0.1.

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6. The imaging apparatus as claimed in claim 1, wherein the brush roller includes at least one of a conductive material and a semiconductive material, and is adapted to apply a bias voltage that is obtained by superimposing an indirect current on a direct current that is of an opposite polarity of a charge polarity of residual toner that is left on the image carrier when developing the latent image on the image carrier.

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7. The imaging apparatus as claimed in claim 1, wherein the image carrier implements a protective layer including a filler.

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8. The imaging apparatus as claimed in claim 7, wherein the filler included in the protective layer corresponds to alumina.

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9. The imaging apparatus as claimed in claim 1, wherein the charge member and the image carrier are separated from each other so that the charge member does not come into contact with the toner, the distance between the charge member and the image carrier being less than or equal to 80 μm .

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10. The imaging apparatus as claimed in claim 1, wherein a volume average particle diameter D_v of the toner is in a range of 3~8 μm , and a dispersity of the toner that is defined by a ratio between the volume average particle diameter D_v and a number average particle diameter of D_n of the toner (D_v/D_n) is in a range of 1.05~1.40.

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11. The imaging apparatus as claimed in claim 1, wherein a shape factor SF-1 of the toner is in a range of 100~180, and a shape factor SF-2 of the toner is in a range of 100~180.

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12. The imaging apparatus as claimed in claim 1, wherein
10 the toner includes spindle shaped particles of which a ratio between a minor axis r_2 and a major axis r_1 (r_2/r_1) is in a range of 0.5~0.8, and a ratio between a thickness r_3 and the minor axis r_2 (r_3/r_2) is in a range of 0.7~1.0, the major axis r_1 , the minor axis r_2 , and the thickness r_3 satisfying a
15 condition, $r_1 > r_2 \geq r_3$.

20 13. The imaging apparatus as claimed in claim 1, wherein the toner is formed by causing at least one of a cross-linking reaction and an elongation reaction on a toner material in a water-based medium in which resin particles exist, the toner material including polyester prepolymer with a functional group
25 having a nitrogen atom, polyester, a coloring agent, and a

release agent.

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14. The imaging apparatus as claimed in claim 1, wherein the toner includes at least one of silica and titania.

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15. A process cartridge that is detachably implemented in an imaging apparatus, the process cartridge being engaged with an image carrier that forms a latent image, and at least one of a charge unit, a developing unit, and a cleaning unit, and comprising:

a body that accommodates toner with an average roundness Ψ in a range of 0.93~0.99; wherein

a friction coefficient μ_s of the image carrier satisfies a condition, friction coefficient $\mu_s \leq 3.6 - 3.3 \times$ average roundness Ψ .

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16. A toner that is used in an imaging apparatus including an image carrier that is adapted to form a latent image, a charge unit that is adapted to charge the image carrier, a developing unit that is adapted to develop the latent image formed on the image carrier with toner to form a toner image, a transfer unit that is adapted to conduct at least one of a process of directly transferring the toner image onto a recording medium that is carried by a transfer belt, and a process of transferring the toner image onto the transfer belt and then transferring the toner image onto the recording medium from the transfer belt, and a cleaning unit including a cleaning blade and a brush roller, the toner comprising:

toner particles with an average roundness Ψ in a range of 0.93~0.99; wherein

a friction coefficient μ_s of the image carrier satisfies a condition, friction coefficient $\mu_s \leq 3.6 - 3.3 \times \text{average roundness } \Psi$.